










Date: Friday, 31/10/2008 10:01:29 AM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : SHORT STEP ASSEMBLY
Job Number : 43114	
Estimate Number : 11672	
P.O. Number :	Part Number : D350591121
This Issue : 31/10/2008 S.O. No. :	Drawing Number : D2351 UNDER REVIEW
Prsht Rev. : NC	Project Number : N/A
First Issue : // Type : LARGE FAB ASSY	Drawing Revision : E
Previous Run : 38908	Material :
Written By :	Due Date : 15/11/2008 Qty: 5 Um: Each
Checked & Approved By : JUD 08.10.31	
Comment : Est Rev:E 02.10.21 Re-format; Incorporated D2351-041 IPP K J/RF est rev. F 06.02.23 added grinding EC	
Additional Product	
Job Number: 	
Seq. #:	Machine Or Operation: Description :
1.0	DC DOCUMENT CONTROL
	 <i>for JUD 08/11/25</i> 
Comment: DOCUMENT CONTROL Photocopy bluefile and type labels as per PPP D350-591-121CHG004 <i>5 02/01/19</i>	
2.0	D2244116 Step Extrusion
	 
Comment: Qty.: 0.5000 Each(s)/Unit Total : 2.0000 Each(s) Pick: Qty Part Number Description Batch 0.5 D2244-116 Extrusion <i>B33733 (1)</i> <i>B38023 (4)</i> <i>SAD 09-01-05</i> <i>MB</i>	
3.0	LARGE FAB 1 LARGE FABRICATION RESOURCE 1
	 
Comment: LARGE FABRICATION RESOURCE 1 1-Cut D2244-116 extrusion to 55.32" long as per Dwg D2351 using cutting table setup DT8185-G 2-Drill extrusion per Dwg D2351 using Jig DT8230 for rivets. 3-Deburr <i>SAD 09-01-05</i> <i>MB</i> <i>(4)</i>	
4.0	BENDING BENDING MACHINE - SKIDTUBES
	 <i>MB - 09-01-06</i> 
Comment: BENDING MACHINE Bend per Dwg D2351 using Bend Program D23561dD FT011 <i>MB</i>	

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Job Number: 43114

Part Number: D350591121

Job Number:



Seq. #: Machine Or Operation: Description :

5.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/01/06 (X5)

6.0

D28501

End Bracket



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Qty Part Number Description Batch
1 D2850-1 End Bracket 320919

PH 09-1-07 5

7.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Bevel Fwd and Aft end for welding

2-Weld Aft End Bracket per QSI 004 & Dwg D2351 using Welding Jig DT8033

A/R Aluminum Rod m/c 9560

3-Do not Grind Flush

PH 09-01-07 5
PH 09-01-07 5
PH 09-01-07 5

8.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

RF 09-01-08 5

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/01/08 (X5)

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

SAD 09-01-08 (5)

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

PH 09-01-09 5

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 43114

Part Number: D350591121

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

D2582

Step Leg Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2582

Step Leg Assy

B40087

SAD 09-01-09 5

13.0

MS20600AD4W3

Cherry Rivets



Comment: Qty.: 16.0000 Each(s)/Unit Total: 64.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

16 MS20600AD4W3

Rivet

M102929

SAD 09-01-09 5

14.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Rivet Leg Assembly as per Dwg D2351

SAD 09-01-09 5

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

SAD 09-01-09 5

16.0

D267334

End Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2673-34 End Plate

B35887

SAD 09-01-13 5

17.0

LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld Fwd End Plate per QSI 004 & Dwg D2351:

A/R

Aluminum Rod

M108037

SAD 09-01-13 5

2-Grind end cap flush per dwg D2351

SAD 09-01-13 5

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 43114

Part Number: D350591121

Job Number:



Seq. #: Machine Or Operation: Description :

18.0

QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

BE 09-01-13 (5x)

19.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

S 09/01/13 (x5) LH

20.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Touch up Alodine

FL 09/01/13 (5)

21.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

START TIME:

3:40

OVEN TEMPERATURE:

320°

FINISH TIME:

4:10

FL 08/01/14 (5)

22.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Wing Walk per Dwg D2351 and QSI 005 4.4

Batch:

M110454

O.M 09.01.15 (1)

23.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

S 08/01/15 (5) (4)

24.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Pick Packing Kit

25.0

D22301

Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Packing Kit Qty Part Number

Description

Batch

43444

FL 09/01/16 (5)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Date: Friday, 31/10/2008 10:01:30 AM
User: Julie Dawson

Process Sheet

(5)

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: SHORT STEP ASSEMBLY

Job Number: 43114

Part Number: D350591121

*Job Number:



Seq. #:

Machine Or Operation:

Description :

1 D2230-1 Mounting Lug

26.0

D22303

Lug



Comment: Qty.: 1.0000 Each(s)/Unit Total: 4.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch
1 D2230-3 Mounting Lug 43223

9/01/16 (5)

27.0

D2856400

Abrasion Strip



Comment: Qty.: 0.6000 f(s)/Unit Total: 2.4000 f(s)

Pick:

Packing KitQty Part Number Description Batch
1 D2856-400 7.20" Abrasion Strip 42076

9/01/16

28.0

AN337A

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total: 8.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch
2 AN3-37A Bolt M9230

9/01/16

29.0

AN413A

Bolt



Comment: Qty.: 3.0000 Each(s)/Unit Total: 12.0000 Each(s)

AN4-13A

Batch: M109288

9/01/16

30.0

AN960JD10

Washer



Comment: Qty.: 4.0000 Each(s)/Unit Total: 16.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch
4 AN960JD10 Washer M109061

9/01/16

31.0

AN960JD416

Washer



Comment: Qty.: 6.0000 Each(s)/Unit Total: 24.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch
6 AN960JD416 Washer M109249

9/01/16 (5)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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(5)

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Drawing Name: SHORT STEP ASSEMBLY

Job Number: 43114

Part Number: D350591121

Job Number:



Seq. #: Machine Or Operation: Description :

32.0 MS21042L3 Nut



Comment: Qty.: 2.0000 Each(s)/Unit Total: 8.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch
2 MS21042L3 Nut (or -3) M108816

33.0 MS21042L4 Nut



Comment: Qty.: 3.0000 Each(s)/Unit Total: 12.0000 Each(s)

Pick:

Packing KitQty Part Number Description Batch
3 MS21042L4 Nut (or -4) M105282

34.0 QC4 INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

35.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-591-121

Location: 80

PPP Rev: D

36.0 QC21 FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



W 09.01.20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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NOTE: Date & initial all entries

DART

DESIGN KE	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D2351	REV. E SHEET 1 OF 2
DATE 05.11.14		TITLE HIGH FLOAT STEP ASSEMBLY	SCALE NTS
A	95.02.15	NEW ISSUE	
B	97.05.22	END CAPS CHANGED	
C	97.07.23	ADDED BUSHING AND FACING INFO	
D	98.12.17	CHANGED TO BEND, D2850 REPLACES D2357 & D2358, INCORP. DEO 9084	
E	05.11.14	UPDATE FINISHING NOTE	

D2351 HIGH FLOAT STEP ASSEMBLY PARTS LIST

Part No.	Description	QTY -041	QTY -042
D2351-041	High Float Step Assembly (LH)	X	
D2351-042	High Float Step Assembly (RH)		X
D2244-55.4	STEP EXTRUSION*	1	1
D2582	STEP LEG ASSEMBLY	1	1
D2673-34	STEP END PLATE	1	1
D2850-1	END BRACKET	1	
D2850-2	END BRACKET		1
MS20600AD4W3	RIVETS	16	16

*cut per drawing

SHOP COPY
RETURN TO
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 13114

RELEASED
05.11.28PH
ECN 1105**UNDER REVIEW**

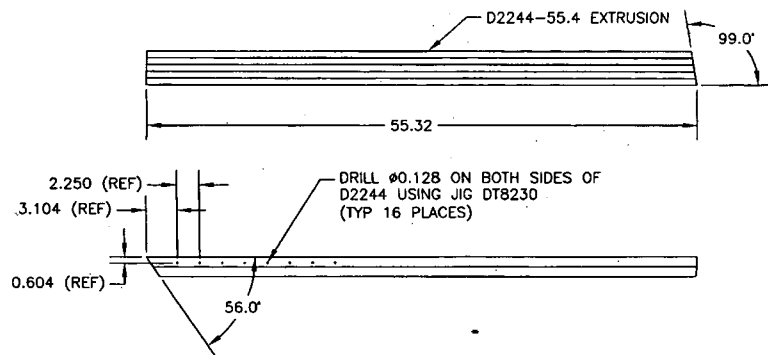
07.11.29

PER REC# 263

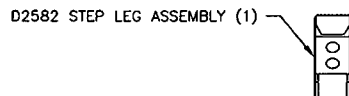
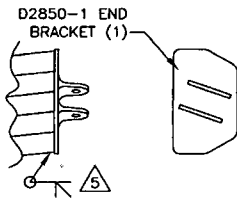
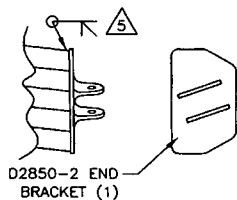
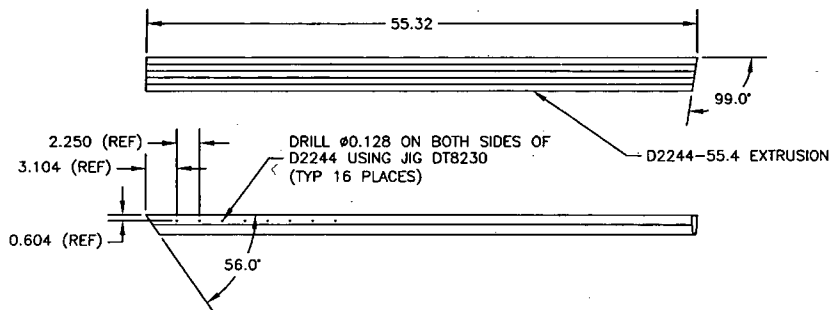
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D2351-2 CUTTING/DRILLING DETAIL
RIGHT STEP



D2351-1 CUTTING/DRILLING DETAIL
LEFT STEP



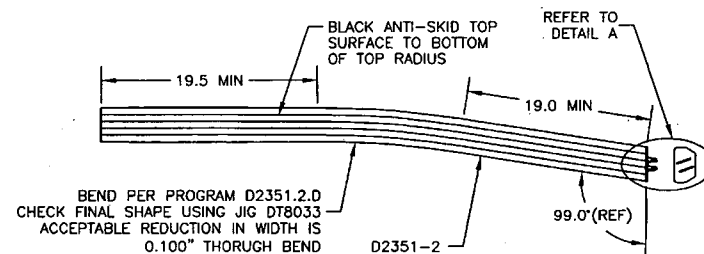
DETAIL A
SCALE: 1:4

DETAIL B
SCALE: 1:4

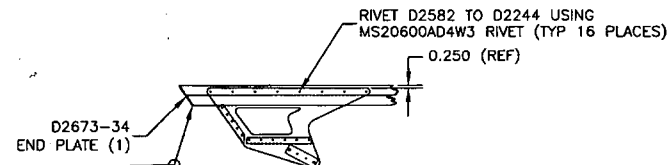
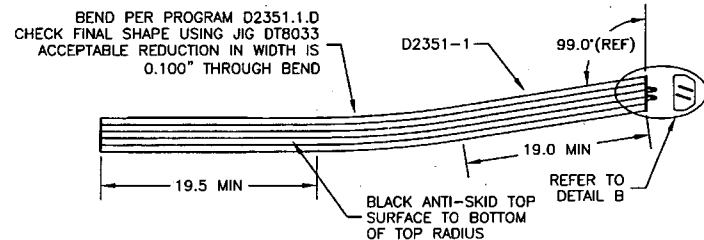
GENERAL NOTES

- 1) WELD PER DART QSI 004
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT GLOSS WHITE (4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT PER DART QSI 005 4.4
 - 3) ALL DIMENSIONS ARE IN INCHES
 - 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- △ CHAMFER D2244 EXTRUSION 0.075"x45° BEFORE WELDING D2850-1 OR D2850-2 IN PLACE. DO NOT GRIND FLUSH.

D2351-042 BENDING/ASSEMBLY DETAIL
RIGHT STEP



D2351-041 BENDING/ASSEMBLY DETAIL
LEFT STEP



RELEASED
05.11.14

UNDER REVIEW

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DESIGN	DRAWN BY	DART	DART AEROSPACE LTD.
KE	PH		HARRISBURG, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.	REV. E
		D2351	SHEET 2 OF 2
DATE	TITLE		SCALE
05.11.14	HIGH FLOAT STEP ASSEMBLY		1:12

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AN
ENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 43114

